

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-8, 10-22, 24-31, and 33-42 are pending in the present application.

Claims 1-8, 10-22, 24-28, 30, 31, and 33-37 are amended; Claims 9, 23, and 32 are canceled; and Claims 38-42 are added by the present amendment.

Amendments to the claims find support in the application as originally filed. Thus, no new matter is added.

In the outstanding Office Action, the title was objected to; the drawings were objected to; Claims 15-18 were objected to; Claims 1-7, 11-16, 22, 24-30, and 34-37 were rejected under 35 U.S.C. § 112, second paragraph; Claims 1, 15, 16, and 24 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Publication No. 2003/0025785 to Nihei et al. (herein “Nihei”) in view of U.S. Patent Publication No. 6,281,922 to Suzuki; Claims 2, 3, 8-14, 17-19, 22, 25, 26, and 31-37 were rejected under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Suzuki and U.S. Patent Publication No. 2003/0025782 to Amada et al. (herein “Amada I”); Claims 4 and 27 were rejected under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Suzuki and U.S. Patent Publication No. U.S. 2002/0149666 to Amada et al. (herein “Amada II”); Claims 5 and 28 were rejected under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Suzuki and U.S. Patent Publication No. U.S. 2002/0063770 to Takesue; Claims 6, 21, and 29 were rejected under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Suzuki and U.S. Patent Application No. 2001/0028387 to Maeda; Claims 7 and 30 were rejected under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Suzuki, Maeda, and U.S. Patent Application No. 2004/0184859 to Shimmura; Claim 23 was rejected under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Amada I; and Claim 20 was indicated as allowable if rewritten in independent form.

Applicant thanks the Examiner for the indication of allowable subject matter in Claim 20. However, because Applicant believes that Claim 19 patentably defines over the applied references, Claim 20 is left in dependent form.

Regarding the objection to the title, the title is amended to more clearly indicate the claimed invention. Accordingly, it is respectfully requested the objection to the title be withdrawn.

Further, regarding the objection to the drawings, the specification is amended to mention reference character 407, which identifies an operation panel. Thus, it is respectfully requested the objection to the drawings also be withdrawn.

Regarding the objections to Claims 15-18, Claim 15 is amended to be in independent form, and Claim 17 is amended to depend from Claim 15, thereby overcoming the objections in the Office Action. Thus, Applicant respectfully requests that the objections to Claims 15-18 be withdrawn.

Regarding the rejections of claims under 35 U.S.C. § 112, second paragraph, Claims 1-7, 11-16, 22, 24-30, and 34-37 are amended in light of suggestions in the outstanding Office Action, and the amended claims are believed to clearly recite the claimed inventions. Accordingly, Applicant respectfully requests the claim rejections under 35 U.S.C. §112, second paragraph, be withdrawn.

Applicant respectfully traverses the rejection of Claims 1, 15, and 16 under 35 U.S.C. § 103(a) as unpatentable over Nihei and Suzuki.

Claim 1 is directed to an optical writing system that includes, in part, at least two laser diodes, a polygonal mirror, a first correction mechanism, and a second correction mechanism. The first correction mechanism is configured, in part, to receive a first external parameter and correct, based on the first external parameter, a dot forming position for a terminating edge in a main scanning direction by shifting arbitrarily a phase of picture element clocks. The

second correction mechanism is configured, in part, to receive a second external parameter and correct, based on the second external parameter, an amount of deviation in data writing position along a vertical scanning direction to be approximately one laser diode line width.

Independent Claim 15 includes similar features.

By configuring the first and second correction mechanisms to receive first and second external parameters, respectively, an optical writing system according to Claims 1 and 15 may advantageously allow parameters on which correction is based to be separately set externally.¹

Applicant respectfully submits that Nihei and Suzuki fail to teach or suggest each feature of amended Claims 1 and 15. For example, Nihei and Suzuki fail to teach or suggest receiving first and second external parameters upon which correction is based. Nihei describes an apparatus, for use in an image forming apparatus, that includes a correction mechanism. According to Nihei, the correction mechanism is booted by the light writing apparatus and corrects the dot forming position of the last edge in the main scanning direction by shifting the phase of the pixel clock with a predetermined value.²

However, Applicant respectfully submits that Nihei fails to disclose the claimed second correction mechanism. The outstanding Official Action cites paragraphs [181], [200], and [201] of Nihei as disclosing the second correction mechanism. However, at paragraph [181] and Fig. 24, Nihei merely describes that the light source may be tilted at an angle so that beam spots are displaced by a line pitch in the main scanning direction, not the vertical direction as required by independent Claims 1 and 15. Additionally, at paragraphs [200] and [201] and Fig. 33, Nihei merely indicates that by tilting the laser array to achieve a scanning pitch in the sub-scanning direction (i.e., a vertical direction), a deviation with distance “d” is created in the main scanning direction. Further, Nihei neither teaches nor suggests that

¹ See Applicant's drawings, Figures 8 and 9.

² See Nihei at paragraphs [0113] and [0114].

deviation “d” is corrected to be an amount less than one laser diode width, as required by independent Claims 1 and 15.

Suzuki describes a conventional second correction mechanism.³

However, Nihei and Suzuki fail to teach or suggest a first correction mechanism that is configured to receive a first external parameter and a second correction mechanism that is configured to receive a second external parameter. For example, Nihei merely indicates that a correction is determined by comparing the incoming phase data with a pre-stored value. Nihei neither teaches nor suggests that the pre-stored value used for correction may be controlled via a parameter received from an external source. Similarly, Suzuki neither teaches nor suggests that the parameters used to perform the second correction mechanism may be controlled via a parameter received from an external source.

Further, Nihei and Suzuki do not teach or suggest performing the first correction based on the first parameter and the second correction based on the second parameter. For example, while the phase clock of Nihei changes the operation of the correction mechanism, the beam pitch of Nihei is based on tilting the laser array. Nihei merely indicates that tilting the laser array is a fixed feature of the optical writing system. Even if one were to incorrectly assume that the tilting of the laser array is a second correction mechanism, Nihei neither teaches nor suggests that the tilting is based on a received parameter.

Accordingly, Applicant respectfully submits that Nihei and Suzuki, whether taken individually or in combination, fail to teach or suggest an optical writing system that includes “a first correction mechanism configured to receive a first external parameter [and] correct, based on the first external parameter, a dot forming position [and] a second correction mechanism configured to receive a second external parameter [and] correct, based on the second external parameter, an amount of deviation in data writing position,” as recited in independent Claims 1 and 15.

³ See Suzuki at column 7, lines 5-30

Accordingly, Claims 1 and 15, and claims depending therefrom, are believed to patentably define over Nihei and Suzuki.

Moreover, Applicant respectfully traverses the rejections of Claims 1-14, 17-23, and 25-37 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Suzuki, and Amada I, Amada II, Takesue, or Shimmura. Claims 1-8, 10-14, 17-22, 24-31, and 33-37 depend from independent Claims 1 and 15, which patentably define over Nihei and Suzuki as discussed above, or those claims recite features that patentably define over Nihei and Suzuki as discussed above. Further, Applicant respectfully submits that Amada I, Amada II, Takesue, and Shimmura also fail to teach or suggest the claimed features lacking in the disclosure of Nihei and Suzuki. Accordingly, it is respectfully requested those rejections under 35 U.S.C. § 103(a) be withdrawn.

Therefore, Applicant respectfully submits that independent Claims 1, 15, 19, and 22, and 24, and claims depending therefrom, are allowable.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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